

2.7 REMARKS

Applicants hereby authorize that any fees that may be necessitated by the entry of the present paper, or for any other reason, be deducted from Applicants' Representatives' Deposit Account No. 50-0786/4300.012700/MDM.

The present response fully addresses the Examiner's concerns and is believed to overcome all rejections. Should Examiner McElwain identify any remaining issues, Applicants encourage the Examiner to telephone the undersigned representative at (713) 934-4084 so that any remaining concerns can be allayed in a timely and cost-effective manner.

Respectfully submitted,

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AGENT FOR APPLICANTS

EXHIBIT A**PENDING CLAIMS FOR U. S. SERIAL NO. 09/525,885, NUCCIO *ET AL.***

1. (Amended) An isolated polynucleotide that:
 - (a) encodes a polypeptide having *S*-adenosyl-L-methionine:phosphoethanolamine *N*-methyltransferase [PEAMT or ΔPEAMT] activity and that comprises an at least 27 contiguous amino acid sequence from SEQ ID NO:2 or SEQ ID NO:4;
 - (b) encodes a polypeptide having *S*-adenosyl-L-methionine:phosphoethanolamine *N*-methyltransferase [PEAMT or ΔPEAMT] activity and at least about 85% sequence identity with the amino acid sequence of SEQ ID NO:2 or SEQ ID NO:4;
 - (c) comprises an at least 26 contiguous nucleotide sequence from SEQ ID NO:1 or SEQ ID NO:3; or
 - (d) hybridizes to the sequence of SEQ ID NO:1 or SEQ ID NO:3, or to the complement thereof, under stringent hybridization conditions.
2. The isolated polynucleotide of claim 1, comprising a sequence region that encodes a polypeptide having an at least 27 contiguous amino acid sequence from SEQ ID NO:2 or SEQ ID NO:4.
3. The isolated polynucleotide of claim 2, comprising a sequence region that encodes a polypeptide having an at least 29 contiguous amino acid sequence from SEQ ID NO:2 or SEQ ID NO:4.

4. The isolated polynucleotide of claim 3, comprising a sequence region that encodes a polypeptide having an at least 31 contiguous amino acid sequence from SEQ ID NO:2 or SEQ ID NO:4.
5. The isolated polynucleotide of claim 4, comprising a sequence region that encodes a polypeptide having an at least 33 contiguous amino acid sequence from SEQ ID NO:2 or SEQ ID NO:4.
6. The isolated polynucleotide of claim 5, comprising a sequence region that encodes a polypeptide having an at least 35 contiguous amino acid sequence from SEQ ID NO:2 or SEQ ID NO:4.
7. The isolated polynucleotide of claim 6, comprising a sequence region that encodes a polypeptide having an at least 37 contiguous amino acid sequence from SEQ ID NO:2 or SEQ ID NO:4.
8. The isolated polynucleotide of claim 7, comprising a sequence region that encodes a polypeptide having the sequence of SEQ ID NO:2 or SEQ ID NO:4.
9. (Amended) The isolated polynucleotide of claim 1, comprising a sequence region that encodes a polypeptide having S-adenosyl-L-methionine:phosphoethanolamine N-methyltransferase [PEAMT or ΔPEAMT] activity and at least about 85% sequence identity with the amino acid sequence of SEQ ID NO:2 or SEQ ID NO:4.

10. (Amended) The isolated polynucleotide of claim 9, comprising a sequence region that encodes a polypeptide having S-adenosyl-L-methionine:phosphoethanolamine N-methyltransferase [PEAMT or ΔPEAMT] activity and at least about 90% sequence identity with the amino acid sequence of SEQ ID NO:2 or SEQ ID NO:4.
11. (Amended) The isolated polynucleotide of claim 10, comprising a sequence region that encodes a polypeptide having S-adenosyl-L-methionine:phosphoethanolamine N-methyltransferase [PEAMT or ΔPEAMT] activity and at least about 95% sequence identity with the amino acid sequence of SEQ ID NO:2 or SEQ ID NO:4.
12. (Amended) The isolated polynucleotide of claim 11, comprising a sequence region that encodes a polypeptide having S-adenosyl-L-methionine:phosphoethanolamine N-methyltransferase [PEAMT or ΔPEAMT] activity and at least about [85]96% sequence identity with the amino acid sequence of SEQ ID NO:2 or SEQ ID NO:4.
13. (Amended) The isolated polynucleotide of claim 12, comprising a sequence region that encodes a polypeptide having S-adenosyl-L-methionine:phosphoethanolamine N-methyltransferase [PEAMT or ΔPEAMT] activity and at least about 98% sequence identity with the amino acid sequence of SEQ ID NO:2 or SEQ ID NO:4.
14. The isolated polynucleotide of claim 1, comprising an at least 26 contiguous nucleotide sequence from SEQ ID NO:1 or SEQ ID NO:3.
15. The isolated polynucleotide of claim 14, comprising an at least 30 contiguous nucleotide sequence from SEQ ID NO:1 or SEQ ID NO:3.

16. The isolated polynucleotide of claim 15, comprising an at least 40 contiguous nucleotide sequence from SEQ ID NO:1 or SEQ ID NO:3.
17. The isolated polynucleotide of claim 16, comprising an at least 50 contiguous nucleotide sequence from SEQ ID NO:1 or SEQ ID NO:3.
18. The isolated polynucleotide of claim 17, comprising the nucleotide sequence of SEQ ID NO:1 or SEQ ID NO:3.
19. Omitted
20. The isolated polynucleotide of claim 1, comprising a sequence region that hybridizes to the sequence of SEQ ID NO:1 from about position 254 to about position 1735, or to the sequence of SEQ ID NO:3, or to the complement of SEQ ID NO:1 or SEQ ID NO:3, under stringent hybridization conditions.
21. The isolated polynucleotide of claim 20, comprising a sequence region that hybridizes under hybridization conditions comprising a salt concentration of from about 0.02 M to about 0.15 M, and a temperature of from about 50°C to about 70°C.
22. An isolated polynucleotide that comprises:
 - (a) a sequence region that consists of at least 26 contiguous nucleotides that have the same sequence as, or are complementary to, at least 26 contiguous nucleotides of SEQ ID NO:1 or SEQ ID NO:3; or

- (b) a sequence region of from 26 to about 10,000 nucleotides in length that hybridizes to the nucleic acid segment of SEQ ID NO:1 or SEQ ID NO:3; or the complement thereof, under hybridization conditions comprising a salt concentration of from about 0.02 M to about 0.15 M, and a temperature of from about 50°C to about 70°C.
23. The isolated polynucleotide of claim 22, comprising a sequence region that consists of at least 26 contiguous nucleotides that have the same sequence as, or are complementary to, at least 26 contiguous nucleotides of SEQ ID NO:1 or SEQ ID NO:3.
24. The isolated polynucleotide of claim 23, wherein said polynucleotide is from about 100 to about 10,000 nucleotides in length.
25. The isolated polynucleotide of claim 24, wherein said nucleic acid segment is from about 500 to about 5,000 nucleotides in length.
26. The isolated polynucleotide of claim 25, wherein said nucleic acid segment is from about 1000 to about 4,000 nucleotides in length.
27. The isolated polynucleotide of claim 22, comprising a sequence region of from 26 to about 10,000 nucleotides in length that hybridizes to the nucleic acid segment of SEQ ID NO:1 or SEQ ID NO:3; or that hybridizes to the complement thereof, under hybridization conditions comprising a salt concentration of from about 0.02 M to about 0.15 M, and a temperature of from about 50°C to about 70°C.

28. The isolated polynucleotide of claim 27, comprising a sequence region of from 30 to about 5000 nucleotides in length that hybridizes to the nucleic acid segment of SEQ ID NO:1 or SEQ ID NO:3; or that hybridizes to the complement thereof, under hybridization conditions comprising a salt concentration of from about 0.02 M to about 0.15 M, and a temperature of from about 50°C to about 70°C.
29. The isolated polynucleotide of claim 28, comprising a sequence region of from 40 to about 4000 nucleotides in length that hybridizes to the nucleic acid segment of SEQ ID NO:1 or SEQ ID NO:3; or that hybridizes to the complement thereof, under hybridization conditions comprising a salt concentration of from about 0.02 M to about 0.15 M, and a temperature of from about 50°C to about 70°C.
30. The isolated polynucleotide of claim 29, comprising a sequence region of from 50 to about 3000 nucleotides in length that hybridizes to the nucleic acid segment of SEQ ID NO:1 or SEQ ID NO:3; or that hybridizes to the complement thereof, under hybridization conditions comprising a salt concentration of from about 0.02 M to about 0.15 M, and a temperature of from about 50°C to about 70°C.
31. The isolated polynucleotide of claim 30, comprising a sequence region of from 60 to about 2000 nucleotides in length that hybridizes to the nucleic acid segment of SEQ ID NO:1 or SEQ ID NO:3; or that hybridizes to the complement thereof, under hybridization conditions comprising a salt concentration of from about 0.02 M to about 0.15 M, and a temperature of from about 50°C to about 70°C.
32. The isolated polynucleotide of claim 31, comprising a sequence region of from 70 to about 1000 nucleotides in length that hybridizes to the nucleic acid segment of SEQ ID NO:1 or SEQ ID NO:3; or that hybridizes to the complement thereof, under hybridization conditions

comprising a salt concentration of from about 0.02 M to about 0.15 M, and a temperature of from about 50°C to about 70°C.

33. The polynucleotide of claim 1 or claim 22, further defined as an RNA, a PNA, or a DNA segment.
34. The polynucleotide of claim 1 or claim 22 comprised within a vector.
35. The polynucleotide of claim 34, comprised within a plasmid, cosmid, phage, phagemid, baculovirus, virus, virion, bacterial artificial chromosome, or yeast artificial chromosome vector.
36. The polynucleotide of claim 35, wherein said vector further comprises a promoter that is operably linked to said polynucleotide.
37. The polynucleotide of claim 36, wherein said promoter is a heterologous promoter.
- 38-39. Withdrawn
40. A virus comprising the polynucleotide of claim 1 or claim 22.
41. A host cell comprising the polynucleotide of claim 1 or 22 or the virus of claim 40.
42. The host cell of claim 41, wherein said host cell is a bacterial cell.

43. The host cell of claim 42, wherein said host cell is an *Escherichia*, *Salmonella* or *Agrobacterium* cell.

44-77 Withdrawn

78. (New) The isolated polynucleotide of claim 7, comprising a sequence region that encodes a polypeptide having an at least 40 contiguous amino acid sequence from SEQ ID NO:2.

79. (New) The isolated polynucleotide of claim 78, comprising a sequence region that encodes a polypeptide having an at least 60 contiguous amino acid sequence from SEQ ID NO:2.

80. (New) The isolated polynucleotide of claim 79, comprising a sequence region that encodes a polypeptide having an at least 80 contiguous amino acid sequence from SEQ ID NO:2.

81. (New) The isolated polynucleotide of claim 80, comprising a sequence region that encodes a polypeptide having an at least 100 contiguous amino acid sequence from SEQ ID NO:2.

82. (New) The isolated polynucleotide of claim 81, comprising a sequence region that encodes a polypeptide having an at least 120 contiguous amino acid sequence from SEQ ID NO:2.

83. (New) The isolated polynucleotide of claim 82, comprising a sequence region that encodes a polypeptide having an at least 140 contiguous amino acid sequence from SEQ ID NO:2.

84. (New) The isolated polynucleotide of claim 83, comprising a sequence region that encodes a polypeptide having an at least 160 contiguous amino acid sequence from SEQ ID NO:2.
85. (New) The isolated polynucleotide of claim 1, comprising an at least 100 contiguous nucleotide sequence from SEQ ID NO:1 or SEQ ID NO:3.
86. (New) The isolated polynucleotide of claim 85, comprising an at least 120 contiguous nucleotide sequence from SEQ ID NO:1 or SEQ ID NO:3.
87. (New) The isolated polynucleotide of claim 86, comprising an at least 140 contiguous nucleotide sequence from SEQ ID NO:1 or SEQ ID NO:3.
88. (New) The isolated polynucleotide of claim 87, comprising an at least 160 contiguous nucleotide sequence from SEQ ID NO:1 or SEQ ID NO:3.
89. (New) The isolated polynucleotide of claim 88, comprising an at least 180 contiguous nucleotide sequence from SEQ ID NO:1 or SEQ ID NO:3.
90. (New) The isolated polynucleotide of claim 89, comprising an at least 200 contiguous nucleotide sequence from SEQ ID NO:1 or SEQ ID NO:3.
91. (New) The isolated polynucleotide of claim 90, comprising an at least 220 contiguous nucleotide sequence from SEQ ID NO:1 or SEQ ID NO:3.

92. (New) The isolated polynucleotide of claim 91, comprising an at least 240 contiguous nucleotide sequence from SEQ ID NO:1 or SEQ ID NO:3.
93. (New) The isolated polynucleotide of claim 92, comprising the nucleotide sequence of SEQ ID NO:1.
94. (New) The isolated polynucleotide of claim 92, comprising the nucleotide sequence of SEQ ID NO:3.
95. (New) An isolated polynucleotide that encodes a polypeptide having *S*-adenosyl-L-methionine:phosphoethanolamine *N*-methyltransferase activity and that comprises an at least 27 contiguous amino acid sequence from SEQ ID NO:2.
96. (New) An isolated polynucleotide that encodes a polypeptide having *S*-adenosyl-L-methionine:phosphoethanolamine *N*-methyltransferase activity and at least about 85% sequence identity with the amino acid sequence of SEQ ID NO:2.
97. (New) An isolated polynucleotide that encodes a polypeptide having *S*-adenosyl-L-methionine:phosphoethanolamine *N*-methyltransferase activity, wherein said polynucleotide comprises an at least 26 contiguous nucleotide sequence from SEQ ID NO:1 or SEQ ID NO:3.
98. (New) An isolated polynucleotide that hybridizes to the sequence of SEQ ID NO:1 or SEQ ID NO:3, or to the complement thereof, under stringent hybridization conditions.

99. (New) An isolated polynucleotide comprising a sequence region that encodes a polypeptide having the sequence of SEQ ID NO:2.